

Prominin 2 siRNA (h): sc-94521

BACKGROUND

Prominin 2, also known as PROM-2, hPROML2 (prominin-like protein 2) or prominin-related protein, is an 834 amino acid multi-pass membrane protein belonging to the prominin family of pentaspan membrane glycoproteins. Encoded by a gene that maps to human chromosome 2q11.1, Prominin 2 exists as three alternatively spliced isoforms and shares less than 30% amino acid identity with CD133. However, Prominin 2 displays strikingly similar genomic organization with CD133, which suggests an early gene duplication event. Prominin 2 localizes to basal epithelial cells and colocalizes with CD133. Similar to CD133, Prominin 2 is expressed in kidney, prostate, trachea, esophagus, salivary gland, thyroid gland, mammary gland, adrenal gland, placenta, stomach, spinal cord and liver. Conversely, Prominin 2 is not expressed in eye, which may explain why a loss-of function mutation in human CD133 is linked to retinal degeneration without other obvious pathological signs. Prominin 2 is also expressed in prostate cancer cell lines, and spindle-shaped or stellate stromal cells in submucosal tumors. Prominin 2 may play a role in the organization of plasma membrane microdomains.

REFERENCES

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2. Fargeas, C.A., et al. 2003. Characterization of Prominin 2, a new member of the prominin family of pentaspan membrane glycoproteins. *J. Biol. Chem.* 278: 8586-8596.
3. Fargeas, C.A., et al. 2003. AC133 antigen, CD133, Prominin-1, Prominin 2, etc.: prominin family gene products in need of a rational nomenclature. *Stem Cells* 21: 506-508.
4. Shmelkov, S.V., et al. 2005. AC133/CD133/Prominin-1. *Int. J. Biochem. Cell Biol.* 37: 715-719.
5. Florek, M., et al. 2007. Prominin 2 is a cholesterol-binding protein associated with apical and basolateral plasmalemmal protrusions in polarized epithelial cells and released into urine. *Cell Tissue Res.* 328: 31-47.
6. Yamazaki, K. 2007. An ultrastructural and immunohistochemical study of elastofibroma: CD 34, MEF-2, Prominin 2 (CD133), and factor XIIIa-positive proliferating fibroblastic stromal cells connected by Cx43-type gap junctions. *Ultrastruct. Pathol.* 31: 209-219.

CHROMOSOMAL LOCATION

Genetic locus: PROM2 (human) mapping to 2q11.1.

PRODUCT

Prominin 2 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Prominin 2 shRNA Plasmid (h): sc-94521-SH and Prominin 2 shRNA (h) Lentiviral Particles: sc-94521-V as alternate gene silencing products.

For independent verification of Prominin 2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-94521A, sc-94521B and sc-94521C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Prominin 2 siRNA (h) is recommended for the inhibition of Prominin 2 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Prominin 2 gene expression knockdown using RT-PCR Primer: Prominin 2 (h)-PR: sc-94521-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Brown, C.W., et al. 2019. Prominin2 drives ferroptosis resistance by stimulating iron export. *Dev. Cell* 51: 575-586.e4.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.